

OCT 11 2006

Serial No. 10/659,219

Atty. Doc. No. 2001P17947WOUS

REMARKS

Applicants have amended claims 1, 4, 5, 7, 10, 12 - 14 and added new claims 15, 16, 17 and 18. Thus, claims 1 - 18 are presented for examination. Applicants respectfully request reconsideration and allowance of the pending claims in view of the foregoing amendments and the following remarks.

Response to objections to the Specification:

The Examiner has objected to the disclosure due to informalities. Applicants have amended the specification to overcome the informalities per the Examiners recommendations. Therefore, withdrawal of the objections to the disclosure is respectfully requested.

Response to rejections under Section 112:

Claims 1 - 14 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicants regard as their invention. Applicants have amended the specification to overcome the rejections. The Applicants invention utilizes the novel step of irradiating the outer surface of the at least one layer that results in very high local temperatures at the layer but does not heat the entire substrate. Therefore, withdrawal of the Section 112 rejection is respectfully requested.

Response to rejections under Section 102:

Claims 1 -5 and 9 - 14 stand rejected under 35 U.S.C. § 102(b), the Examiner contending that these claims are anticipated by Kang et al. (USPN 5,800,695).

Applicants have amended independent claims 1, 13 and 14 to include the limitation of irradiating by a high energy beam a near-surface region of the coating layer to improve adhesion of the coating layer to the substrate. In contrast, Kang et al. discloses diffusion heat treating the entire coated component. As those skilled in the art readily appreciate, irradiation and diffusion heat treatment are two distinct processes. Irradiation involves precision bombardment of concentrated high energy beams whereas diffusion heat treatment involves global application of convective heating. This difference is not one of mere design choice because irradiating creates very high localized temperatures that diffusion heat treatment cannot create.

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In view of the above, dependent claims 2 - 5 and 9 - 12 are patentable based on their dependency from claim 1 as well as based on their own merit. Therefore, Applicants respectfully request withdrawal of the Section 102 rejections.

Response to rejections under Section 103:

Claims 6 - 8 stand rejected under 35 U.S.C. § 103(a), as being unpatentable over Kang et al. in view of JP 1-100302.

JP 1-100302 abstract apparently teaches irradiating a hard substance coating a turbine blade to fuse the hard substance to the blade mother material. This irradiation apparently must be performed on the entire surface of the hard surface at the same time in order to properly surface harden the layer. In contrast, Applicants claims recite irradiating the near-surface region to ensure melting and homogenization of the coating layer and a region of the substrate located directly below the irradiated near-surface region without melting and homogenizing a region of the substrate located laterally adjacent the melted and homogenized substrate region. Thus, if anything, JP 1-100302 teaches away from Applicants' claimed invention. Therefore, Applicants respectfully request withdraw the Section 103 rejections.

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Conclusion

For the foregoing reasons, it is respectfully submitted that the objections and rejections set forth in the outstanding Office Action are inapplicable to the present claims. Please grant any extensions of time required to enter this paper. The commissioner is hereby authorized to charge any appropriate fees due in connection with this paper, or credit any overpayments to Deposit Account No. 19-2179.

Respectfully submitted,

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